

IN THE CLAIMS:

1.-34. (Canceled)

35. (Currently Amended) ~~The electronic circuit recited in claim 34,~~ An electronic circuit for coupling to a weather radar system on-board an aircraft to display weather information and forecast weather data relative to a phase of flight of the aircraft, comprising:

a weather radar processor adapted to receive first and second weather radar return signals from a receiver portion of said weather radar system resident on-board said aircraft and convert said first and second weather radar return signals into first and second weather radar image signals representative of weather information relative to said aircraft contained in said weather radar return signals;

a memory coupled to said processor and adapted to receive and store said first and second weather radar image signals;

a weather incident prediction function operated by said processor and coupled to said memory to receive first and second different ones of said stored weather radar image signals, said weather incident prediction function adapted to forecast future weather information relative to said aircraft as a function of said first and second stored weather radar image signals, and generate a signal representative of said future weather information; and

a threat prediction function operated by said processor and coupled to receive a signal representative of a phase of flight of the aircraft and said signal representative of said future weather information, said threat prediction function adapted to compare said future weather information and said phase of flight and predict a threat to the safety of flight as a function of said comparison;

wherein said weather radar processor is further adapted to generate a warning signal as a function of said threat prediction function, and

wherein said weather radar processor is further adapted to determine two or more gradations of threat and to generate said warning signal as a function of said two or more gradations of threat.

36.-38. (Canceled)